osmium (Os), and nickel (Ni).

10. The magnetoresistance effect element of claim 1, wherein the nonmagnetic high-conductivity layer comprises a first nonmagnetic high-conductivity film disposed in contact with the first ferromagnetic layer and a second nonmagnetic high-conductivity film disposed in contact with the first nonmagnetic high-conductivity film so that the first nonmagnetic high-conductivity film is disposed between the first ferromagnetic layer and the second nonmagnetic high-conductivity film.

11. The magnetoresistance effect element of claim 10, wherein the first nonmagnetic high-conductivity film contains copper (Cu).

12. The magnetoresistance effect element of claim 10, wherein the second nonmagnetic high-conductivity layer contains an element selected from the group consisting of ruthenium (Ru), rhenium (Re), rhodium (Rh), palladium (Pd), platinum (Pt), iridium (Ir), and osmium (Os).

13. The magnetoresistance effect element of claim 10, further comprising a layer disposed in contact with the second nonmagnetic high-conductivity film so as to sandwich the second nonmagnetic high-conductivity film with the first nonmagnetic high-conductivity film and containing an element selected from the group consisting of chromium (Cr), tantalum (Ta), titanium (Ti), zirconium (Zr), tungsten (W), hafnium (Hf), and

molybdenum (Mo).

14. The magnetoresistance effect element of claim 1, further comprising a layer disposed in contact with the nonmagnetic high-conductivity film so as to sandwich the nonmagnetic high-conductivity film with the first ferromagnetic and containing an element selected from the group consisting of chromium (Cr), tantalum (Ta), titanium (Ti), zirconium (Zr), tungsten (W), hafnium (Hf), and molybdenum (Mo).

15. The magnetoresistance effect element of claim 1, wherein the first ferromagnetic layer includes a laminate film, and the laminate film comprises a layer containing nickel iron (NiFe) alloy and a layer containing cobalt (Co).

16. The magnetoresistance effect element of claim 1, wherein the first ferromagnetic layer contains cobalt iron (CoFe) alloy.

17. The magnetoresistance effect element of claim 1, wherein the nonmagnetic spacer layer contains copper (Cu) and the nonmagnetic spacer layer has a film thickness between 1.5 nanometers and 2.5 nanometers.

18. The magnetoresistance effect element of claim 1, wherein one of the first and second ferromagnetic films disposed adjacent to the nonmagnetic spacer layer has a film thickness equal to or thicker than another one of the first and second ferromagnetic films, and a difference in magnetic thickness between the first and second ferromagnetic films falls between

0 nanometers Tesla and 3 nanometers Tesla.

19. The magnetoresistance effect element of claim 1, wherein the antiferromagnetically coupling film contains ruthenium (Ru) and the coupling film has a film thickness between 0.8 nanometers and 1.2 nanometers.

20. The magnetoresistance effect element of claim 1, further comprising an antiferromagnetic layer disposed in contact with and magnetically exchange coupled with one of the first and the second ferromagnetic films for fixing the magnetization of said one of the first and the second ferromagnetic films, the antiferromagnetic layer containing XzMn1-z in which X is an element selected from the group consisting of iridium (Ir), ruthenium (Ru), rhodium (Rh), platinum (Pt), palladium (Pd) and rhenium (Re) and the compositional factor z falls between 5 atomic % and 40 atomic %.

21. The magnetoresistance effect element of claim 1, further comprising an antiferromagnetic layer disposed in contact with and magnetically exchange coupled with one of the first and the second ferromagnetic films for fixing the magnetization of the one of the first and the second ferromagnetic films, the antiferromagnetic layer containing XzMn1-z in which X is an element selected from the group consisting of platinum (Pt) and palladium (Pd) and compositional factor z falls between 40 atomic % and 65 atomic %.

22. A magnetoresistance effect element, comprising: